

**WHAT IS CLAIMED IS:**

- 1 1. A method comprising the steps of:  
2 processing a first voice having a first characteristic to a first level of precision using a  
3 first finite impulse response filter, wherein the first level of precision is based on  
4 the first characteristic;  
5 processing a second voice having a second characteristic to a second level of precision  
6 using a second finite impulse response filter; wherein the second level of  
7 precision is based on the second characteristic; and  
8 wherein a number of coefficients used by the first finite impulse response filter plus a  
9 number of coefficients used by the second finite impulse response filter does not  
10 exceed a predetermined maximum number of coefficients.
- 1 2. The method of Claim 1, wherein the steps of processing are used to provide localization  
2 of the first voice and the second voice in three-dimensional space.
- 1 3. The method of Claim 1, wherein the first characteristic includes a first interpreted  
2 distance and the second characteristic includes a second interpreted distance different  
3 from the first interpreted distance.
- 1 4. The method of Claim 1, wherein the first characteristic includes a first audio type and the  
2 second characteristic includes a second audio type different from the first audio type.
- 1 5. The method of Claim 1, wherein the first characteristic includes a first priority level and  
2 the second characteristic includes a second priority level different from the first priority  
3 level.

1 6. The method of Claim 1, further including the step of prioritizing the first voice and the  
2 second voice.

1 7. The method of Claim 6, wherein the coefficients used by the finite impulse response filter  
2 are determined using a Head Related Transfer Function.

1 8. A method comprising the steps of:

2 receiving a first voice data having a first characteristic;

3 receiving a second voice data having a second characteristic;

4 assigning a first number of coefficients based on the first characteristic;

5 assigning a second number of coefficients based on the second characteristic.

1 9. The method of Claim 8, further including the steps of:

2 processing the first voice data using a first finite impulse response filter, wherein a

3 number of coefficients used by the first finite impulse response filter is equal to

4 the first number of coefficients assigned to the first voice data; and

5 processing the second voice data using a second finite impulse response filter, wherein a

6 number of coefficients used by the second finite impulse response filter is equal to

7 the second number of coefficients assigned to the second voice data.

1 10. The method of Claim 8, wherein the first characteristic and the second characteristic are  
2 determined prior to the step of receiving.

1 11. The method of Claim 8, wherein the first characteristic and the second characteristic are  
2 determined subsequent to the step of receiving.

1 12. The method of Claim 8, wherein the first characteristic includes a first interpreted  
2 distance and the second characteristic includes a second interpreted distance different  
3 from the first interpreted distance.

1 13. The method of Claim 8, wherein the first characteristic includes a first audio type and the  
2 second characteristic includes a second audio type different from the first audio type.

- 1 14. The method of Claim 8, wherein the first characteristic includes a first priority level and  
2 the second characteristic includes a second priority level different from the first priority  
3 level.

1 15. A method comprising the steps of:  
2 assigning a first number of coefficients to a first voice having a first characteristic,  
3 wherein first number of coefficients is based on the first characteristic;  
4 assigning a second number of coefficients to a second voice having a second  
5 characteristic, wherein first number of coefficients is based on the first  
6 characteristic, and where the sum of the first number of coefficients and the  
7 second number of coefficients are no more than a predetermined fixed number of  
8 coefficients;  
9 applying a first Head Related Transfer Function to the first voice, the first Head Related  
10 Transfer Function using a number of coefficients equal to the first number of  
11 coefficients assigned to the first voice; and  
12 applying a second Head Related Transfer Function to the second , the second Head  
13 Related Transfer Function using a number of coefficients equal to the second  
14 number of coefficients assigned to the second voice.

1 16. The method of Claim 15, further including the steps of:  
2 determining the first characteristic of the first voice; and  
3 determining the second characteristic of the second voice.

1 17. The method of Claim 15, wherein the first characteristic and the second characteristic are  
2 determined prior to the step of receiving.

1 18. The method of Claim 15, wherein the first characteristic and the second characteristic are  
2 determined subsequent to the step of receiving.

1 19. The method of Claim 15, wherein the first characteristic includes a first interpreted  
2 distance and the second characteristic includes a second interpreted distance different  
3 from the first interpreted distance.

- 1     20.     The method of Claim 15, wherein the first characteristic includes a first audio type and  
2             the second characteristic includes a second audio type different from the first audio type.
- 1     21.     The method of Claim 15, wherein the first characteristic includes a first priority level and  
2             the second characteristic includes a second priority level different from the first priority  
3             level.
- 1     22.     The method of Claim 15, wherein the steps of applying a Head Related Transfer Function  
2             are used to provide localization of sound in three-dimensional space.

- 1 23. A method comprising the step of:  
2 receiving a plurality of voices, wherein the plurality of voices is representative of a  
3 plurality of sound sources;  
4 distributing a fixed number of coefficients among the plurality of voices, wherein a  
5 number of coefficients assigned to a voice is based on a priority associated with  
6 the voice; and  
7 applying a Head Related Transfer Function to each voice of the plurality of voices using  
8 a finite impulse response filter, wherein the number of coefficients used by the  
9 finite impulse response filter to filter a voice is based on a number of the fixed  
10 number of coefficients distributed to the voice.
- 1 24. The method of Claim 23, wherein the priority associated with a voice is determined prior  
2 to the step of receiving.
- 1 25. The method of Claim 23, wherein the priority associated with a voice is determined  
2 subsequent to the step of receiving.
- 1 26. The method of Claim 23, wherein the priority associated with a voice is based on an  
2 interpreted distance of the voice.
- 1 27. The method of Claim 23, wherein the priority associated with a voice is based on an  
2 audio type of the voice.
- 1 28. The method of Claim 23, wherein the step of applying a Head Related Transfer Function  
2 is used to provide localization of sound in three-dimensional space.

1    29.    The method of Claim 23, wherein the step of distributing a fixed number of coefficients  
2       includes the steps of:  
3       assigning a number of the fixed number of coefficients each subgroup of a plurality of  
4           subgroups;  
5       associating each of the plurality of voices with one of the plurality of subgroups;  
6       distributing, for each subgroup of the plurality of subgroups, the number of coefficients  
7           assigned to the subgroup among the voices associated with the subgroup.

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1 30. A device comprising:  
2 a processor;  
3 memory operably coupled to said processor; and  
4 a program of instructions capable of being stored in said memory and executed by said  
5 processor, said program of instructions to manipulate said processor to:  
6 receive a first voice data having a first characteristic;  
7 receive a second voice data having a second characteristic;  
8 assign a first number of coefficients based on the first characteristic;  
9 assign a second number of coefficients based on the second characteristic.

1 31. The device of Claim 30, said program of instructions further including instructions to  
2 manipulate a processor to:  
3 process the first voice data using a first finite impulse response filter, wherein a number  
4 of coefficients used by the first finite impulse response filter is equal to the first  
5 number of coefficients assigned to the first voice data; and  
6 process the second voice data using a second finite impulse response filter, wherein a  
7 number of coefficients used by the second finite impulse response filter is equal to  
8 the second number of coefficients assigned to the second voice data.

1 32. The device of Claim 30, wherein the first characteristic and the second characteristic are  
2 determined prior to receipt of the first voice data and the second voice data.

1 33. The device of Claim 30, wherein the first characteristic and the second characteristic are  
2 determined subsequent to receipt of the first voice data and the second voice data.

1 34. The device of Claim 30, wherein the first characteristic includes a first interpreted  
2 distance and the second characteristic includes a second interpreted distance different  
3 from the first interpreted distance.

1 35. The device of Claim 30, wherein the first characteristic includes a first audio type and the  
2 second characteristic includes a second audio type different from the first audio type.

1 36. The device of Claim 30, wherein the first characteristic includes a first priority level and  
2 the second characteristic includes a second priority level different from the first priority  
3 level.

1 37. A computer readable medium tangibly embodying a program of instructions, said  
2 program of instructions including instructions to manipulate a processor to:  
3 receive a first voice data having a first characteristic;  
4 receive a second voice data having a second characteristic;  
5 assign a first number of coefficients based on the first characteristic;  
6 assign a second number of coefficients based on the second characteristic.

1 38. The computer readable medium of Claim 37, said program of instructions further  
2 including instructions to manipulate a processor to:  
3 process the first voice data using a first finite impulse response filter, wherein a number  
4 of coefficients used by the first finite impulse response filter is equal to the first  
5 number of coefficients assigned to the first voice data; and  
6 process the second voice data using a second finite impulse response filter, wherein a  
7 number of coefficients used by the second finite impulse response filter is equal to  
8 the second number of coefficients assigned to the second voice data.

1 39. The computer readable medium of Claim 37, wherein the first characteristic and the  
2 second characteristic are determined prior to receipt of the first voice data and the second  
3 voice data.

1 40. The computer readable medium of Claim 37, wherein the first characteristic and the  
2 second characteristic are determined subsequent to receipt of the first voice data and the  
3 second voice data.

1 41. The computer readable medium of Claim 37, wherein the first characteristic includes a  
2 first interpreted distance and the second characteristic includes a second interpreted  
3 distance different from the first interpreted distance.

1 42. The computer readable medium of Claim 37, wherein the first characteristic includes a  
2 first audio type and the second characteristic includes a second audio type different from  
3 the first audio type.

1 43. The computer readable medium of Claim 37, wherein the first characteristic includes a  
2 first priority level and the second characteristic includes a second priority level different  
3 from the first priority level.